REMARKS

Applicants' representative thanks the Examiner for the courtesies extended by the Examiner with regard to the telephonic conference on July 17, 2008, with Francis Dunn and information conveyed to the Examiner *via* phone on July 10, 2008, by Francis Dunn. Proposed amendments to independent claims 1, 33, and 38-40 were discussed with the Examiner, and it was respectfully submitted that the proposed amendments to the claims render those claims, and claims that depend therefrom, allowable, in view of the indication that claims 24-32 stand allowed. The Examiner agreed that the proposed amendments to claims 1, 33, and 38-40 would overcome the rejection under 35 U.S.C. § 103. With regard to the rejection of certain claims under 35 U.S.C. § 101, the Examiner contended that the proposed amendments would not overcome the rejection. With regard to claims 1, 33, and 38, the Examiner suggested including hardware, such as a processor, to each of those claims to overcome the rejection. With regard to claims 39 and 40, the Examiner suggested amending "computer readable medium" to "computer storage medium", and indicated that may overcome the rejection. It was respectfully submitted that the Specification supported "a computer readable medium". It was also indicated that claim 42 would be withdrawn.

Claims 1-42 are currently pending in the subject application, and claims 1-41 are presently under consideration. Applicants' representative thanks the Examiner for indicating that claims 24-32 stand allowed. The Examiner has rejected claims 1-23, 33-40, and 42. While Applicants' representative disagrees that the cited references render obvious any of the subject claims, in order to expedite prosecution, claims 1, 33, 38, 39, and 40 have been amended herein (in view of the Examiner's indication that claims 24-32 stand allowed), so that all claims presently under consideration are in condition for allowance, as shown on pages 2-16 of the Reply. Claim 42 is withdrawn herein. No new matter has been added.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1-23, 33-40, and 42 Under 35 U.S.C. § 101

Claims 1-23, 33-40, and 42 are rejected under 35 U.S.C. § 101 on the grounds that the claimed subject matter is directed toward non-statutory subject matter. It is requested that this rejection be withdrawn for at least the following reasons. The claimed subject matter as recited in claims 1-23 and 33-40 can produce a useful, concrete, and tangible result and is therefore within the bounds of statutory subject matter in accordance with 35 U.S.C. § 101. Claim 42 is withdrawn herein and rejection of this claim is thereby rendered moot.

> Title 35, section 101, explains that an invention includes "any new and useful process, machine, manufacture or composition of matter."... Without question, ***software code alone qualifies as an invention eligible for patenting under these categories***. *Eolas Techs., Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1338-39 (Fed. Cir. 2005) (holding that 35 U.S.C. § 101 did not limit inventions or components of an invention to structural or physical components (*e.g.*, non-software components). ***Rather, every component, including software components, of every form of invention deserves the protection of § 271(f) because it is patentable subject matter under 35 U.S.C. §101***).

Independent claim 1, as amended, recites: *A* ***machine-implemented system for document retrieval and/or indexing comprising: a processor; a component*** *that receives a captured image of at least a portion of a physical document; and* ***a search component*** *that locates a match to the physical document, the search is performed over word-level topological properties of generated images, the word-level topological properties comprise at least respective widths of words on the generated images, and the generated images being images of at least a portion of one or more electronic documents; and* ***a comparison component*** *that iteratively compares a portion of a signature associated with the captured image based at least in part on word-level topological properties with corresponding portions of signatures respectively associated with the generated images based at least in part on word-level topological properties and excludes each generated image whose portion of the signature does not match the portion of the signature of the captured image to facilitate location of a match to the physical document . . . .*

The claimed subject matter can produce a useful, concrete, and tangible result and is therefore in accordance with 35 U.S.C. § 101. The claimed subject matter is a ***machine-implemented system*** that can be employed to facilitate document retrieval and/or indexing. Thus, the claimed subject matter is implemented by a machine, such as a computer, for example, and a machine is a tangible embodiment. Also, the claimed subject matter comprises ***a processor***, which is a hardware component. (*See, e.g.,* p. 40, lns. 24-30; Fig. 18.) Further, the claimed subject matter comprises components, such as a search component and a comparison component, that can facilitate document retrieval and/or indexing in part by comparison of a captured image to generated images to identify a generated image that corresponds to the captured image. The identified generated image can be provided to a user. Based on at least the foregoing, the claimed subject matter is directed to statutory subject matter in accordance with 35 U.S.C. § 101.

For at least reasons similar to the reasons stated herein with regard to independent claim 1, independent claims 33 and 38 can produce a useful, concrete, and tangible result, and are directed to statutory subject matter, and are therefore in accordance with 35 U.S.C. § 101.

Further, independent claims 39 and 40 can produce a useful, concrete, and tangible result in accordance with 35 U.S.C. § 101. For instance, independent claim 39 comprises ***a computer readable medium having a data structure thereon, the data structure to: return at least one stored image of an electronic document to a user based at least in part upon topological word properties of at least one captured image corresponding to the electronic document*** . . . . The claimed subject matter is a computer readable medium and provides a useful, concrete, and tangible result – the claimed subject matter ***returns at least one stored image of an electronic document to a user***. Further, the Specification discloses that the terms "component," "handler," "model," "system," and the like are intended to refer to a computer-related entity, either hardware, a combination of hardware and software, software, or software in execution, wherein, for example, a component may be, but is not limited to being, a process running on a processor, a processor, an object, an executable, a thread of execution, a program, and/or a computer. (*See* p. 9, lns. 9-14.) Further, the Specification discloses that "these components can execute from various ***computer readable media*** having various data

structures stored thereon." (*See* p. 9, lns. 17-18; and *see also* p. 41, lns. 9-30; Fig. 18.) Thus, the Specification provides support for claimed subject matter related to a computer readable medium.

With regard to independent claim 40, ***a computer readable medium having a data structure thereon, the data structure comprising: . . . a search component that facilitates retrieval of an electronic document*** . . . . The claimed subject matter is a computer readable medium and provides a useful, concrete, and tangible result – the claimed subject matter facilitates retrieval of an electronic document. The retrieved electronic document can be provided, for example, to a user. Further, for at least reasons similar to the reasons stated herein with regard to independent claim 39, the Specification provides support for claimed subject matter related to a computer readable medium. (*See,* p. 9, lns. 9-14, 17-18; *see also* p. 41, lns. 9-30; Fig. 18.)

In view of at least the foregoing, claims 1-23 and 33-40 can produce a useful, concrete, and tangible result, and are properly limited to statutory subject matter in accordance with 35 U.S.C. § 101. Claim 42 is withdrawn herein and rejection of this claim is therefore rendered moot. It is believed that claims 1-23 and 33-40 are in condition for allowance, and withdrawal of this rejection is respectfully requested.

II. Rejection of Claims 1-4, 7-9, 11-12, 19-22, 33-36, 38-40, and 42 Under 35 U.S.C. § 103(a)

Claims 1-4, 7-9, 11-12, 19-22, 25-26, 33-36, 38-40, and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao (US Patent No. 6,487,301), in view of Lienhart *et al.* (US 6,470,094), and further in view of Hale *et al.* (US 6,928,548). To reject a claim under 35 U.S.C. § 103(a),

> the prior art reference (or references when combined) ***must teach or suggest all the claim limitations.*** *See* MPEP § 706.02(j) (emphasis added). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *See In re Vaeck,* 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The claimed subject matter relates to indexing and/or retrieval of a stored electronic document by comparing a signature, or portion thereof, related to the document with a signature related to an image of a printed document corresponding to the stored document. The claimed subject matter can utilize word-level topological properties (*e.g.*, location of a word, width of a word, *etc.*) of the document to generate a signature for that document, thereby enabling retrieval of the stored document (*e.g.*, stored image) more efficiently and expeditiously. Signatures that identify stored documents can be generated by obtaining data associated with the respective word-layouts within the documents. For example, a location of a word or a portion of words, or a width of words, within a document can be utilized to create a signature that robustly identifies a document, as a probability of two disparate documents having a substantially similar layout pattern is low. As further example, signatures can be represented by hash tables where each table location can correspond to a respective portion of a document. A data value can be entered into the table location based on the information (*e.g.*, word, blank space, *etc.*) at that corresponding portion of the document.

Signatures, or portions thereof, that represent word-layouts of electronic documents (*e.g.*, stored images) can then be compared (*e.g.,* employing an iterative multi-tiered comparison) with a signature of a later-captured image of a printed document, and the stored electronic document(s) whose signature(s) most closely matches the signature of the later-captured image can be retrieved, for example. For instance, where the signatures are represented as hash tables, a particular electronic document(s) can be retrieved if that electronic document(s) has the highest number of table locations that have values that match corresponding table locations of the captured document, as compared to other electronic documents. Thus, indexing and/or retrieval of documents can be facilitated without requiring an exorbitant amount of resources or time.

In particular, independent claim 1, as amended, recites: *a comparison component* ***that iteratively compares a portion of a signature associated with the captured image based at least in part on word-level topological properties with corresponding portions of signatures respectively associated with the generated images based at least in part on word-level topological properties and excludes each generated image whose portion of***

the signature does not match the portion of the signature of the captured image to facilitate location of a match to the physical document,

the portion of the signature associated with the captured image and the portion of the signatures respectively associated with the generated images that are compared become progressively smaller with each iteration, where one or more iterations are performed until a predetermined threshold number of generated images remain,

wherein each portion of signature respectively associated with a generated image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the generated image is entered into a respective table location for each segment of the generated image, and

wherein the portion of the signature associated with the captured image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the captured image is entered into a respective table location for each segment of the captured image. Zhao, Lienhart, *et al.*, and Hale, *et al.*, either alone or in combination, do not teach or suggest the distinctive features of the claimed subject matter.

Rather, Zhao discloses techniques for incorporating authentication information into digital representations of objects using the authentication information to authenticate the objects. (*See* Abstract). Zhao further discloses selecting semantic information from a digital representation and using it to make a digest. (*See* col. 6, lns. 32-36). Semantic information in a digital representation of an image of a document is the representations of the alphanumeric characters in the document, where alphanumeric characters are understood to include representations of any kind of written characters or punctuation marks. (*See* col. 6, lns. 52-57). Zhao discloses determining the authenticity of a digital representation of an object by comparing its authentication information to the authentication information that can be stored in a storage system or can be semantic information in the digital representation which can be read. (*See* col. 4, lns. 15-33).

However, unlike the claimed subject matter, Zhao fails to disclose retrieving a document from a database by performing an iterative multi-tier comparison of a portion of a signature of a captured image to respective portions of signatures of generated

images to exclude those generated images whose signature portion fails to match that of the signature portion of the captured image in order to facilitate retrieving the desired generated image that matches the captured image. Further, Zhao fails to teach employing hash tables that represent portions of signatures of respective images to facilitate comparing a captured image to generated images.

Further, Lienhart *et al.* fails to teach or suggest the distinctive features of the claimed subject matter. Rather, Lienhart *et al.* relates to localization and/or segmentation of text in images, wherein the images may be still or motion images, such as in video or web pages. (*See* col. 1, lns. 64-67). Lienhart *et al.* fails to teach a multi-tier comparison of a signature portion of a captured image and respective signature portions of generated images. Further, Lienhart *et al.* fails to teach utilizing hash tables that represent portions of signatures of respective images to facilitate comparing a captured image to generated images to identify and retrieve a generated image that matches the captured image, such as recited in the claimed subject matter.

Hale *et al.* also fails to teach the distinctive features of the claimed subject matter. Hale *et al.* relates to verifying the integrity of information that is stored in an electronic device during preboot operations. (*See* col. 2, lns. 63-65). The stored information may include a digitally signed image that includes a post-relocation image of a software module or is dynamically linked with another digitally stored image. (*See* col. 2, ln. 66 – col. 3, ln. 2). A pre-location image is a binary representation of a software module prior to conducting a relocation operation thereon. (*See* col. 3, lns. 12-14). A post re-location image is a binary representation of a software module after relocation. (*See* col. 3, lns. 14-15). The post re-location image differs from the pre-location image. (*See* col. 3, lns. 41-42). A digital signature is based on a hash value of its pre-location image. (*See* col. 5, lns. 21-24). Upon being loaded with the digitally signed images, the memory undergoes a relocation operation which modifies the stored images from the pre-relocation images to post-relocation images. (*See* col. 5, lns. 24-29). For integrity verification of stored information, a post-relocation image of a digitally signed image is reconverted to a pre-relocation image. (*See* col. 5, lns. 30-35). A hash operation is performed on the reconverted, pre-relocation image to produce a hash value ("reconverted hash value"). (*See* col. 5, lns. 41-43). The recovered hash value of a digital signature is compared to

the reconverted hash value to determine if there is a match in order to verify the post-relocation image. (*See* col. 5, lns. 44-52).

However, unlike the claimed subject matter, Hale *et al.* fails to teach iteratively comparing a portion of a signature of a captured image with corresponding portions of generated images to locate a physical document associated with the captured image. Further, while Hale *et al.* teaches a recovered hash value and a reconverted hash value, Hale *et al.* fails to teach employing hash tables that represent portions of signatures of respective images to facilitate comparing a captured image to generated images, such as recited in the claimed subject matter. Rather, Hale *et al.* teaches comparing a recovered hash value related to a pre-relocation image with a reconverted hash value related to a post-relocation image to determine whether they match. (*See* col. 5, lns. 44-52). A post-relocation image is either verified or not verified. (*See* col. 5, lns. 50-55). Hale *et al.* does not perform multiple iterations with respect to a group of images in order to locate a desired image or document.

Hale *et al.* also teaches employing tables where each digitally signed image can be associated with a respective import table, export table, and image. (*See* col. 6, ln. 50-col. 7, ln. 11). Hale *et al.* teaches that, to verify the integrity of the digitally signed images, a hash operation can be performed on an import table, export table, and image associated with a digitally signed image, which can produce a resultant hash value. (*See* col. 7, lns. 7-14). The resultant hash value can be compared to the recovered hash value of the digital signature associated with such digitally signed image, and if the resultant hash value matches the recovered hash value, the import table, export table, and image associated with the digitally signed image have not been modified. (*See* col. 7, lns. 14-19). This operation is continued with all remaining digitally signed images. (*See* col. 7, lns. 19-21). If the integrity of the digitally signed images cannot be verified, an error is reported. (*See* col. 7, lns. 22-23). Thus, either a match is located or an error is indicated. Therefore, again, Hale *et al.* fails to teach an iterative comparison of a captured image with a group respective generated images, where the respective signature portions of respective images become smaller (*e.g.,* and more refined) for each iteration, to identify a match or to narrow the number of potential choices of generated images to a predetermined threshold number.

In contrast, to facilitate locating a desired physical document, the claimed subject matter can search word-level topological properties, such as the respective widths of words associated with generated images, to match a generated image(s) with the captured image associated with the physical document. The claimed subject matter can retrieve generated image(s) that match the captured image, or a portion thereof, from a data store. To facilitate retrieving the desired generated image, the claimed subject matter can perform a multi-tiered comparison to iteratively compare a portion of a signature associated with the captured image with corresponding portions of signatures respectively associated with generated images that can be stored in a data store. In one aspect, a portion of a signature of an image (*e.g.,* generated image, captured image) can be represented by a hash table with a plurality of table locations where a respective value corresponding to a respective segment of the image can be entered into a respective table location for each segment of the image. Those signature portions of the generated images that do not match the corresponding portion of the captured image can be excluded from further consideration.

In one aspect, the claimed subject matter can perform one or more additional tiers of comparisons, as the comparison component can compare a smaller signature portion of the captured image to corresponding smaller respective signature portions of the generated images that remain in consideration, excluding those generated images whose smaller signature portion fails to match the smaller signature portion of the captured image. The comparison component can continue to perform iterative comparisons involving respective signature portions of images (*e.g.,* generated image, captured image) that can be progressively smaller in size with each iteration until a predetermined threshold number of generated images remain for consideration. Once the predetermined threshold number of generated images has been reached, the remaining generated image(s) can be returned to the user and/or can each be further compared to determine which generated image most closely matches the captured image. Thus, indexing and/or retrieval of documents can be facilitated without requiring an exorbitant amount of resources or time.

Also, independent claim 33, as amended, recites: ***means for iteratively comparing location of respective words and width of respective words within a portion of a***

signature associated with the captured image to the location of respective words and width of respective words within respective portions of signatures associated with the generated images and excluding each generated image whose signature portion does not match the signature portion of the captured image,

the portion of the signature associated with the captured image and the corresponding portions of the signatures respectively associated with the generated images that are compared become progressively smaller with each iteration, where one or more iterations are performed until a predetermined threshold number of generated images remain,

wherein each portion of signature respectively associated with a generated image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the generated image is entered into a respective table location for each segment of the generated image, and

wherein the portion of the signature associated with the captured image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the captured image is entered into a respective table location for each segment of the captured image.

For at least reasons similar to the reasons stated herein with regard to independent claim 1, Zhao, Lienhart *et al.*, and Hale *et al.*, either alone or in combination, fail to disclose, teach, or suggest the distinctive features of the claimed subject matter, as recited in independent claim 33.

Further, independent claim 38, as amended, recites: ***the comparison component iteratively compares a portion of a signature associated with the received image with corresponding portions of signatures respectively associated with the stored images and excludes each stored image whose signature does not match the signature of the received image to facilitate identification of a match to the printed document,***

the portion of the signature associated with the received image and the portion of the signatures respectively associated with the stored images that are compared become progressively smaller with each iteration, where one or more iterations are performed until a predetermined threshold number of signatures associated with stored images remain,

wherein location of words and width of words within at least a portion of a stored image is represented as a portion of a signature of the stored image, and location of words and width of words within at least a portion of the received image of the printed document is represented as a portion of a signature of the received image,

wherein each portion of signature respectively associated with a stored image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the stored image is entered into a respective table location for each segment of the stored image, and wherein the portion of the signature associated with the received image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the received image is entered into a respective table location for each segment of the received image.

For at least reasons similar to the reasons stated herein with regard to independent claim 1, the cited art, either alone or in combination, fails to disclose, teach, or suggest the distinctive features of the claimed subject matter, as recited in independent claim 38.

Furthermore, independent claim 39, as amended, recites: ***an iterative comparison of a portion of a signature associated with the at least one captured image with corresponding portions of signatures respectively associated with the at least one stored image and excludes each stored image whose signature does not match the signature of the at least one captured image to facilitate identification of a match to the electronic document,***

the portion of the signature associated with the at least one captured image and the portion of the signatures respectively associated with the at least one stored image that are compared become progressively smaller with each iteration, where one or more iterations are performed until a predetermined threshold number of signatures associated with the at least one stored image remains, wherein the topological word properties comprise at least width of respective words,

wherein the portion of the signature associated with the at least one captured image is based at least in part on topological word properties of a corresponding portion of the at least one captured image, and the portion of signature

associated with the at least one stored image is based at least in part on topological word properties of a corresponding portion of the at least one stored image,

wherein each portion of a signature respectively associated with a stored image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the stored image is entered into a respective table location for each segment of the stored image, and

wherein the portion of the signature associated with the captured image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the captured image is entered into a respective table location for each segment of the captured image.

For at least reasons similar to the reasons stated herein with regard to independent claim 1, Zhao, Lienhart *et al.*, and Hale *et al.*, either alone or in combination, fail to disclose, teach, or suggest the distinctive features of the claimed subject matter, as recited in independent claim 39.

Furthermore, independent claim 40, as amended, recites: ***a comparison component that is associated with the search component and iteratively compares a portion of a signature associated with the received image associated with the printed document with corresponding portions of signatures respectively associated with the generated images and excludes each generated image whose signature does not match the signature of the received image to facilitate location of a match to the printed document,***

the portion of the signature associated with the received image and the portion of the signatures respectively associated with the generated images that are compared become progressively smaller with each iteration, where one or more iterations are performed until a predetermined threshold number of signatures associated with generated images remain,

wherein the portion of the signature associated with the received image is based at least in part on word-level topological properties of a corresponding portion of the received image, and portions of signature respectively associated with the generated images is based at least in part on word-level topological properties of corresponding portions of the generated images,

wherein each portion of a signature respectively associated with a generated image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the generated image is entered into a respective table location for each segment of the generated image, and

wherein the portion of the signature associated with the received image is a hash table that contains a plurality of table locations where a respective value corresponding to a respective segment of the received image is entered into a respective table location for each segment of the received image.

For at least reasons similar to the reasons stated herein with regard to independent claim 1, the cited art, either alone or in combination, fails to disclose, teach, or suggest the distinctive features of the claimed subject matter, as recited in independent claim 40.

In view of at least the foregoing, it is readily apparent that Zhao, Lienhart *et al.*, and Hale *et al.*, either alone or in combination, fail to disclose, teach, or suggest each and every element of the claimed subject matter as recited in independent claims 1, 33, and 38-40 (and associated claims 2-4, 7-9, 11, 12, 19-22, 34-36). Claim 42 is withdrawn herein and rejection of this claim is thereby rendered moot. Accordingly, it is believed that the subject claims are in condition for allowance, and the rejection should be withdrawn.

III. Rejection of Claims 5, 6, and 10 Under 35 U.S.C. § 103(a)

Claims 5, 6, and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao, in view of Lienhart *et al.*, and further in view of Hale *et al.*, and further in view of Ming Ye *et al.*, "Document Image Matching and Annotation Lifting," 2001 IEEE (hereinafter "Ye *et al.*"). This rejection should be withdrawn for at least the following reason. Zhao, Lienhart *et al.*, Hale *et al.*, and Ye *et al.*, either alone or in combination, do not disclose, teach, or suggest each and every element of the subject claims. Claims 5, 6, and 10 depend from independent claim 1. Ye *et al.* fails to cure the aforementioned deficiencies of Zhao and Lienhart *et al.*, and Hale *et al.*, as to independent claim 1. Based on at least the foregoing, it is respectfully requested that the rejection be withdrawn.

IV. Rejection of Claim 41 Under 35 U.S.C. § 103(a)

Claim 41 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao, in view of Lienhart *et al.*, and further in view of Hale *et al.*, and further in view of Bresler *et al.* (US Pub No. 2003/0152293). This rejection should be withdrawn for at least the following reason. Zhao, Lienhart *et al.*, Hale *et al.*, and Bresler *et al.*, either alone or in combination, do not teach or suggest each and every element of the subject claims. Claim 41 contains elements similar to independent claim 1. Bresler *et al.* fails to cure the aforementioned deficiencies of Zhao, Lienhart *et al.*, and Hale *et al.*, as to independent claim 1, and therefore, with regard to claim 41 as well. Accordingly, this rejection should be withdrawn.

V. Rejection of Claims 13, 23, and 37 Under 35 U.S.C. § 103(a)

Claims 13, 23, and 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao, in view of Lienhart *et al.*, and further in view of Hale *et al.*, and further in view of Shin-Ywan Wang *et al.*, "Block Selection: A Method for Segmenting Page image of Various Editing Styles," Canon Information Systems 1995 IEEE (hereinafter "Wang *et al.*"). This rejection should be withdrawn for at least the following reason. Zhao, Lienhart *et al.*, Hale *et al.*, and Wang *et al.*, either alone or in combination, do not teach or suggest each and every element of the subject claims. Claims 13 and 23 depend from independent claim 1; and claim 37 depends from independent claim 33. Wang *et al.* fails to cure the aforementioned deficiencies of Zhao, Lienhart *et al.*, and Hale *et al.*, as to independent claims 1 and 33. Accordingly, it is respectfully requested that the rejection be withdrawn.

VI. Rejection of Claims 14-18 Under 35 U.S.C. § 103(a)

Claims 14-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao, in view of Lienhart *et al.*, and further in view of Hale *et al.*, and further in view of Bloomberg (US Pat. No. 5,181,255). This rejection should be withdrawn for at least the following reason. Zhao, Lienhart *et al.*, Hale *et al.*, and Bloomberg, either alone or in combination, do not teach or suggest each and every element of the subject claims. Claims 14-18 depend from independent claim 1. Bloomberg fails to cure the aforementioned deficiencies of Zhao, Lienhart, *et al.*, and Hale, *et al.* as to independent claim 1. Accordingly, this rejection should be withdrawn.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063[MSFTP504US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

AMIN, TUROCY & CALVIN, LLP

/ Himanshu S. Amin/
Himanshu S. Amin
Reg. No. 40,894

AMIN, TUROCY & CALVIN, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731